THE JOURNAL OF SCHOOL HEALTH

Vol. XX No. 1

JANUARY
1950

PUBLISHED BY
THE AMERICAN SCHOOL HEALTH ASSOCIATION

AMERICAN SCHOOL HEALTH ASSOCIATION

Organized 1927

Devoted to the interests and advancement of those engaged in school health activities and the service rendered by them

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THE JOURNAL OF SCHOOL HEALTH

THE AMERICAN SCHOOL HEALTH ASSOCIATION

3335 Main Street, Buffalo 14, N. Y.

Published monthly, except July and August, at Buffalo, N. Y.

Editor
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SUBSCRIPTION RATES TO THE JOURNAL

Membership dues, $3.00 including Journal: Subscription $3.00

Single copies 35c, send payment with order

Address all communications to
THE EDITOR, The Journal of School Health
3335 Main Street, Buffalo 14, N. Y.

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Entered as second-class matter at the Post Office at Buffalo, N. Y.
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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XX JANUARY, 1950 No. 1

THREE CURRENT ADMINISTRATIVE PROBLEMS IN HEALTH EDUCATION

EDWARD B. JOHNS, Ed.D.

Associate Professor, in Charge of the School Health Education, Curriculum, University of California, Los Angeles

(Continued from December, 1949)

The second problem under consideration is: *Who shall administer school health departments under boards of education, and who shall administer physical education departments under boards of education?*

Certainly, there is no one best answer for this problem. Local needs definitely determine the type of administrative organization to be utilized. In a large school system the needs are best met through a separate health education department. In a small or medium sized school the organization logically calls for a department combining two or more fields or areas such as health education and physical education, or health education and science.

A discussion of the administrator who is responsible to the superintendent of schools and the board of education is an important consideration in viewing this problem. The administrator, in either case mentioned above, must be the best prepared person available, with experience in both health and education. Competence as an administrator, personality, and experience are more vital qualifications than the type of doctoral degree. In many instances, this administrator is a Medical Doctor; however, he might well be a Doctor of Philosophy or Doctor of Education who has had special preparation in health education. If this person is a Ph.D., or Ed.D., he must be certain to refer any medical problem or question pertaining to the field of medicine to a Medical Doctor for a decision. It is impractical to insist on the medical degree for this administrator for several reasons. First, the need for practicing physicians constitutes the foremost problem in the health field today, second, there is an insufficient number of medical doctors with educational preparation who are able administrators and who are willing to accept the salaries with the great differential from private practice; third, there is evidence to prove that laymen with high qualifications in health and education are administering successful pro-

grams. These people are contributing to the up-grading of health education rather than causing deterioration of the field as a few overly critical individuals indicate.

Regardless of the degree, it is essential that the administrator possesses the ability to carry forward a cooperatively planned, coordinated program meeting the needs of the local school and community.

Similar qualifications discussed for the health education administrator must apply to the director of the physical education program. Here again, the best prepared person available should be made responsible for this department. He must have a sound background in physical education, preferably, physical education and health education. This educator must understand and know how to promote proper interrelationships among departments within the school program. In addition, he should make every effort to coordinate his program with community activities, such as community recreation, youth services, etc. Furthermore, a statement of his philosophy would show his beliefs in American democracy. His administration would demonstrate democratic practices.

The areas of health education and physical education are related, but are not identical.[11] Both must be planned with the same purposes in view. For example, one objective of these areas is to contribute as much as possible to the growth and development of the pupils. Since such close relationships exist, it is important to understand and utilize the natural interrelationships in conducting the total health education program.

In considering the administrative organization in a small or medium sized school system, school district or county schools office in California, separate health education and physical education departments are practically an impossibility. On the other hand, a combined department under a well-prepared person in these fields can be successful. In some instances, this is even true in large systems. The directors of health education and physical education in the offices of the county schools in San Diego and Los Angeles serve as examples of such competent administrators.

Of real concern is the evidence pointing toward the separation of health education and physical education in school systems. Such a tendency is occasionally apparent in the American Association of Health, Physical Education and Recreation professional endeavors. Further efforts are needed to coordinate the functions of these areas rather than to divide them. In many instances, the problems

11. Joint Committee, *Ibid.*, p. 161.

confronting adolescents have been solved best under the guidance of skilled leaders who have employed health education experiences, as well as physical education and recreation activities. These educators need to realize they are rendering a social service. They are helping pupils to become self directive in solving their own problems. All the possible educational experiences inherent in these three areas are needed to accomplish the established goals.

The third problem for consideration is: *Who shall administer health education programs (health instruction) in the public schools—school health departments, physical education departments, departments of instruction or health educators from county or municipal health departments?*

Again, it is stated, there is no one best way to administer a program. This certainly applies to the health instruction division of health education programs. The exact framework of administration depends largely upon that of the total school health program, and the particular school administrative organization at hand.

However, it is believed that the department which applies the four basic principles of administration, thus insuring maximum program development, should administer the health instruction division. This procedure permits freedom of operation, providing a chance to develop the program in a combination of ways: through natural integration or correlation of instruction, through the medium of a separate course, through systematic incidental instruction (planned incidental instruction), and through health guidance on the part of all teachers.

In practice, this plan is not easily carried out under the direction of the physical education department in the average secondary school, unless the staff is specially prepared in health education. Most physical educators have multiple duties and responsibilities. For example, many men physical educators must be responsible for physical education classes, recreation activities, including intramurals, and interscholastics athletics. The addition of health instruction, which necessitates careful planning and preparation to be meaningful and effective, creates a tremendous burden. It is important to point out that the physical educator can be a successful health teacher, since he understands pupils and their problems. However, it is essential that (1) he be well prepared in health education; (2) he is interested in this field; (3) he is allotted sufficient time to make his instruction functional; and (4) he is assigned adequate classroom facilities and instructional materials.

In general, on the secondary level, health education is not

administered efficiently by the physical education department. Of course there are exceptions, but they are few in number. This case for physical education does not necessarily hold true at the college level, since there is a greater likelihood that health specialists will be responsible for the program. Such is the situation at the University of California, Los Angeles. Five health education specialists constitute the instructional staff. The basic principles of administration are applicable to this Department of Physical Education. Here delegation of responsibility provides freedom of operation for program planning to a greater extent than is seen in many other departments or schools.

Whether separate or combined departments exist is not the fundamental issue. However, it is pertinent that the department is a coordinated, functioning unit in the total school system contributing to the educational growth of the school child. It also is paramount that the administrator be a leader skillful in conducting the functions of such a department.

Likewise, health instruction in the schools is not to be administered by health educators from the public health department under present circumstances. In such an administrative organization the basic principles do not apply. The source of power or authority stems from the board of education, not the health department. The public health educators are not *well* prepared in meeting the health needs of school-age children. They are not skilled in ways of changing their behavior. They may have had one course or so in school health education; however, they are not primarily health teachers. The trend in schools of public health seems to be toward increasing the educational offerings, which is commendable. The Master of Public Health with a teaching credential or teaching background is the exception to the above statement. Certainly, public health educators are to be in on the planning of the school program; however, their first concern is focused on adult health education and working with community groups. If the program is cooperatively planned by the school health educator and public health educator both children and adults participate in many purposeful activities which are designed to change their health behavior To consider the point from the knowledge aspect, it is imperative that the same scientific health information reaches the home rather than two distinct, different stories, one from the school, the other from the health department. Naturally, such health education is adapted to different maturity levels. The desired outcome of improved healthful living should be planned for by both the school and public health educator.

It is believed that this cooperative relationship between health educators does not exist if, in a large school system, the school department of instruction administers the health instruction program. It is possible to remedy this to some extent by employing a full-time health educator in the department of instruction. Some departments of instruction believe only in organizing the health curriculum by means of integration. In appraising college students regarding health knowledge, attitudes and practices, evidence points to the ineffectiveness of this type of instruction, if it is the *only* method used. The following statement by John L. Miller, Superintendent of Schools, Great Neck, New York, substantiates the above conclusion:

> "In the upper six years some of the health instruction may be provided for in other subjects such as science and home economics, but there must be at least a one unit course taught by a specialist. Only through such a course can justice be done to the extensive content of the complete health education course since specialists in other subjects have their own objectives to satisfy and can be expected to subordinate health objectives. Moreover, maturing students, particularly those in senior high school need the challenge of being exposed to the teaching of a health specialist. Much can be said for diffusing health content through the high school program of studies, so long as diffusion does not result in confusion, if not chaos, and so long as provision is made for an adequate degree of specialization through the one unit course.
>
> In this connection it should be pointed out that there has been much loose talk about integrating health instruction with other subjects. Integration, however, takes place within the individual learner. It is not necessary to combine or fuse subjects in order for integration to take place. Integration within the pupil may be more readily affected as a result of the services of the specialist who knows his subject so thoroughly that he sets the stage for application of knowledge in new and different situations."[12]

The health instruction division of the program then is best administered by the health education department. This is assuming the institution is a large one, and a separate department has been organized. Such an administrative set-up brings together the major divisions of the school and community health program: namely, health service, healthful school living, and health instruc-

12. John L. Miller, "An Administrator Looks at the School Health Program", *Journal of Educational Sociology.* (September, 1948) p. 27.

tion. It develops interrelationships between divisions which assures a functional program. For example, the influence of health instruction on the other divisions is such that all the activities are educational in nature.

The four basic administrative principles definitely apply to this framework. The source of power flows from the board of education, to the superintendent of schools, to the principal, and to the director of the health education department. Such an administrative organization facilitates the defining of responsibilities for the personnel involved. The budget considers the needs of each health education division. Funds for personnel and materials in health instruction are not eliminated in favor of other instructional items. The budget makes possible the hiring of specialists in health instruction. The principle of cooperation is fully developed. A health instruction committee for the planning and developing of the program becomes an important part of the administrative structure. The committee is composed of representatives from the following: school administration, the health education department (chairman of the committee), each related subject-matter field (i.e., social science, science, home economics, etc.), the health department (the health educator), the student body and citizens (i.e., P.T.A, County Medical Society, County Dental Society, etc.)

In a small or medium sized school the health instruction committee is just as vital. The committee may be a subcommittee of the school curriculum committee, a subcommittee of the school health council or of the health and safety committee. Regardless of the name it is still the fact-finding, curriculum-planning body charged with the development of the health education curriculum.

The health education curriculum under a separate department or planned by a subcommittee utilizes to the fullest extent the democratic process which is vitally expressed in the statement by the National Conference for Cooperation in Health Education:

> "The techniques of thinking together, working together, and planning together to develop the best plan for united action in a given program, with each participant understanding his responsibilities in relation to the work of others, can be used successfully in solving school health problems throughout the country."[13]

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13. National Conference for Cooperation in Health Education, *The School Administrator, Physician and Nurse in the School Health Program,* School Health Monograph, No. 13, Metropolitan Life Insurance Company, p. 8.

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* * * * *

Accident in the Home,—Home is where the heart is—and where the heart of the accident problem is, too.

According to the 1949 edition of "Accident Facts," statistical yearbook of the National Safety Council, there were 35,000 home accident deaths in 1948—which makes the home America's No. 1 accidental killer.

Falls were the greatest cause of home deaths last year, resulting in 18,200 fatalities. Burns, scalds and explosions came next, with a total of 6,000 deaths. Mechanical suffocation caused 1,800 deaths, to rank third in 1948.

Special studies show that more than 25 per cent of fatal home accidents occur in the bedroom. The yard and kitchen are the next most hazardous locations at home, causing about 12 and 10 per cent of the deaths respectively.

AN EVALUATION OF THE FREE HEALTH PUBLICATIONS AVAILABLE FOR USE WITH CHILDREN IN GRADES ONE AND TWO*

DOROTHY L. SCHUTZ

A worthwhile health program is dependent upon adequate provisions being made for a healthful environment in which the children may live and grow. Teachers need to be adequately trained in health objectives, in ways of providing healthful living for children and in ways of teaching health education so that it is vital in the lives of children. Health instruction should be graphic and applicable to facts that are significant to the child, and should be pointed toward actions and habits. Much of the teaching of health in the elementary school has to do with fixing correct personal and mental health habits. To determine criteria for selecting health materials for use with children, research was made of pertinent foundation studies regarding needs and interests of children, factors contributing to reading skill, and integration of health material into the total school program. It was found that both individuals and firms which are publishing health materials need to know what best serves the needs and interests of young children.

Twenty-four free publications in the form of booklets and posters were collected. The list of the publications is included at the end of this article. These publications were evaluated in terms of the needs and interests of children, factors which influence reading, and integration in the school program. Evaluation was made only after sufficient reference reading had been done to find criteria.

Needs and Interests of Children.

Although liveliness, animalism, humor, and conversation are important interest determiners among young children, no one quality is largely responsible for their interest in reading. Intelligence and environmental factors influence both the amount and kind of reading which children do. The majority of the children in the second grade found ideals through their personal experience in their immediate environment, the home and school situation. The indefinite quality of "goodness" appealed to children. Children also admired in others that which was lacking in themselves. Publications varied in the degree to which they met the child's interests as well as his needs, but in general they indicated an

*Digest by author of material prepared for thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Education, U.C.L.A.—July, 1948.

adequate understanding of the needs and interests of the young children.

Factors Which Contribute to Reading Skills. In order for the publications to be of value for use with children in grades one and two, they must meet certain standards in regard to the factors which contribute to reading skills. The following factors are included: vocabulary, sentence length, type, illustrations, color, size, and paper.

A basis for the evaluation of vocabulary load is the number of repetitions of a given word within one book. This is in order to have the same word appear in many different contexts so the children using the book might have many exposures to the same word. Another basis for evaluation of vocabulary is that the words used are basic words which are frequently used. In the beginning stages it is necessary to have a low vocabulary load.

In the twenty-four publications studied, it was found that there was great variation in the vocabulary load as well as in the rate of introducing new words. Seventy-five per cent of the words used in the free health publications were included in the first five hundred most frequently used words according to Gates.[1] This is evidence of a controlled vocabulary.

It is recommended that the classroom teacher not use these materials unless the class has a large enough basic sight vocabulary and knowledge of phonetics and other methods of word analysis to read the material readily.

In analyzing the summary of the number of repetitions, it is interesting to note that the publications varied from 76% being repeated three to five times, to 7% being repeated three to five times, in one publication.

Difficulty in reading can be determined also on the basis of sentence length and structure. Assuming that sentence length may be a factor in reading difficulty, the sentence length of forty-two pre-primers, thirty-eight primers, and forty-one first readers was analyzed. The average number of words per sentence in pre-primers was 4.73, in primers 4.74 and in first readers 7.31. The range in number of words per sentence was 1-14 for pre-primers, from five or less to forty-five for primers, and from five or less to fifty-one for first readers. As indicated by these data, sentence length increases, on the average, from pre-primers to first readers, but varies widely with a given book or in different books. Difficulty

1. Gates, Arthur I. *A Reading Vocabulary in the Primary Grades*, Bureau of Publications, Teachers' College, Columbia, New York, 1935.

in reading material cannot be judged on the basis of sentence only; other significant factors make short sentences difficult to read and long sentences relatively easy. In the free publications evaluated the sentence length fell within the desired range. The words per sentence varied from one to thirty-nine. The line length varied from 1.75 to 4.45 inches; the average line length being 3.22 inches which approximates the standard set by authorities.

In order to evaluate suitability of type for use it is necessary to take into consideration the lighting facilities of the room. In the school room in general, the minimum light should not be less than ten foot candles.* Readability of type is enhanced by increasing its boldness. Teachers observed that a number of pupils reading type less than eighteen points squinted and assumed unnatural reading positions or complained of discomfort from reading. It was found that eighteen point type is more readable in all the first four grades than type which is smaller. In the first grade twenty-four point type is more readable than that which is larger or smaller. Five publications had satisfactory type size according to Blackhurst.[2] Two publications had twenty-four point type, three publications had eighteen point type, seven had fourteen point type and three had twelve point type.

In regard to margin, it was found that there was no advantage in the first grade in making the right margin (margin on the reader's right) regular. There is an advantage in making the left margin regular.

The legibility of various color combinations has been studied. The most legible print was found to be black on yellow.

In the twenty-four health publications it was found that nineteen had black on white which is sixth most desirable, one only had the desired black on yellow.

Since illustrations are of such importance in teaching, the following criteria were found for evaluation of illustrations: Although there are large differences in the choices of children, the children prefer pictures in color to those in black and white. The children prefer the three colored pictures to the two colored pictures and they prefer saturated or strong colors. Some children like realistic style, and some prefer simplification. The term realistic meaning to reproduce an object as accurately as possible. Pictures should represent a focal center of interest directly related to the accompanying text. In primary readers, factual accuracy is

2. Blackhurst, James Herbert, *Investigations in the Hygiene of Reading*, Baltimore, Warwick and York, 1927, 61.

*See page 15 this issue.

demanded in the smallest detail. Bled pictures, pictures extending into the margin, decorated end papers or modernistic two-tone cloth are never inappropriate. Story interest was recognized as the strongest single factor mentioned by children. Children preferred strong outlines and borders.

In the publications evaluated, it was noted that sixteen of the publications made use of the realistic pictures, five used conventionalized pictures, two used photographs. Seventeen publications had saturated color in pictures, while four had unsaturated color. Twenty-one had strong outlines and three had weak outlines. Two booklets and seven posters made use of margins. The pictures were directly related to the story content and helped interpret the story.

The National Tuberculosis Association of New York City[3] published a bulletin giving certain standards for posters on health teaching. The following standards were set: a poster should be large and bold in design and should make use of striking color combinations. The title should be short and to the point with letters neat and spaced accurately. Posters should be thought of as a tool of instruction of greatest value to be found in the creation of desired attitudes rather than as a source of scientific health information. An effective poster should be graphic with a single idea that portrays a lesson at a glance. Posters should be dynamic in appeal, suggesting action or creating a desire for something. The appeal is more effective when expressed positively. The posters evaluated, on the whole, met the standards for evaluating listed above.

In regard to size, small books which can be easily held in the hand are preferred. The larger books usually have to lie on a support which exposes the letters at an angle, greatly lessening their legibility. The size most acceptable to the children in the primary grades appears to be about seven and one-half inches long by five inches wide. Of the fifteen booklets evaluated, eight meet this criteria, one booklet is smaller and six are larger than the seven and one-half by five inches.*

As an eye aid, the paper should be pure color, without gloss. The paper should be of such quality that the printing on one side will not show through on the other. The paper should have a minimum thickness of .075 millimeters. The printing on one side

3. *Posters for Health Teaching Bulletin,* New York National Tuberculosis Association of New York City, 1946.

*For comparative purposes this page is 9 x 6 inches; the length of line is 4½ inches.

should be done so that the evenness of the surface on the other side will not be affected. Fourteen of the booklets made use of dull paper, only one had glossy paper.

Integration in the School Program. At the six and seven year age level, training in habits connected with sleeping and eating continues. All training should be aimed to meet the emotional and intellectual growth to be expected of primary children. Emphasis must be put on those qualities needed by the child to help him achieve a happy useful life as an adult.

As a technique in making health teaching an integral part of the school program, a complete project is possible in the primary grades. In the project we have the coordination of all activities of the classroom in a self-directed, unified, purposeful undertaking.

Effective teaching in health is not reflected in the facts and skills acquired by the children. Its evaluation is found in how the child acts, in his acceptance of the truth of what he learns and in the degree to which he makes his knowledge function.[4] In the primary grades the simple rules of health which pertain to adequate foods, sleep, rest, exercise, clothing and cleanliness are of first importance. The home and school environment offer many opportunities for establishing health habits in every day living. Good textbooks afford the best and most economical way of providing scientific content for the children to read. It follows that the free health materials are to be used as a supplement to healthful living in the classroom.

The content of the publications varied as to their objectives. They presented from one to fourteen different health concepts. The concepts included come in order of frequency as follows: nutrition,* health helpers, mental hygiene, fresh air, exercise, cleanliness, sleep, rest, teeth, recreation, growing up, posture, safety, strong body, prevention of disease, clothing, eyes, and care of the sick. When fewer concepts were included in a publication, a more thorough job was done of developing the concept.

In assuming that in the primary grades emphasis should be placed on the development of habits, it was found that free health publications stressed health habits. The health habit concept has been so developed as to help the child identify himself with other children who live healthfully and so should result in actual formation of health habits in the reader. In general the form of composi-

4. Nyswander, Dorothy B., *Solving School Health Problems*, New York, London; Hymphrey Milford, Oxford Press, 1942, p. 326.

*Of the twenty-two publications listed, sixteen were issued by makers or purveyors of food or food products.—Ed.

tion used was straight narrative story telling of children, animals, and adults, and how they live healthfully. More free or inexpensive health publications for use with young children should be published.

Since great gaps exist between individual studies, there is need for further research, both individual and organized, in health education. Through organized research, material which appears unrelated and hazy, might be drawn together. Suggestive ideas for children's self-chosen activities might be incorporated in some publications in order to serve as a basis for suggestions as to what children might do in the way of engaging in healthful school living. Publications should be made readily accessible for teachers. More adequate provision should be made for circulation and advertisement of publications.

LIST OF PUBLICATIONS EVALUATED

The following publications were included in this study:

BOOKS

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General Mills, *Eat and Grow.* Minneapolis: 1946.
General Mills, *Working and Playing.* Minneapolis: 1946.
General Mills, *Letters to Tony.* Minneapolis: 1946.
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Metropolitan Life Insurance Co., *My Color Book.* New York: 1945.
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THREE-WAY LIGHTING IN THE DENVER SCHOOLS*

A. HELEN ANDERSON
Director of Publications, Denver Public Schools

Three-way lighting as interpreted by the Denver public schools means electric fixtures, redecorating of walls, and the refinishing of floors and furniture. All three of these are necessary in the conservation of eye power; for dark enamel paint, dark floors, and dark, varnished furniture destroy the beneficial effects derived from the installation of artificial lighting.

To date between 18,000 and 19,000 fluorescent fixtures have been installed in the Denver public schools. By December 1, the total will be more than 23,000; and by that time, every classroom will have been provided with artificial lighting.

In addition, the nondescript buff colors that decked the walls of every classroom will have disappeared under soft pastel colors—powder blue, pale yellow, cream, light green, aqua, and peach. The program of refinishing the floors and furniture is under way. The dark oils and the varnishes of several generations—which marked adherence to the philosophy that durability comes first—are being removed as fast as possible. The natural light color of wood is emerging from the shiny varnishes of other years.

Today the school rooms of Denver are places of beauty. Pupils, teachers say, are actually better behaved; and their classroom performance is improved. Teachers themselves find it easier to work. Parents have the feeling that something is being done for their children, even in those older buildings which must live out their usefulness.

However, lack of artificial light and dark paint are certainly not the only factors that created a cavernous darkness in some of Denver's schoolrooms. The very architecture of the buildings contributed to the Stygian gloom of the interiors. Buildings with the high, narrow Victorian windows of the eighties and nineties are not much darker than some of the newer buildings in which architects sacrificed light for the sake of design. In their eagerness to reproduce exteriors reflecting Renaissance, Tudor, and Jacobean periods, architects of the 1920's and 1930's forgot that even Colorado sunlight cannot penetrate brick walls. The buildings under design in the current building program will be functional—and this time period design will be forgotten in the interest of the eyesight and nerves of the boys and girls who spend so many hours in school.

When the Denver board of education began two years ago to study the lighting program, it discovered that in many buildings—

*Reprint from School Management, November 1949, page 5.

from those built in the roaring, mining days of the eighties to the present time—only one electric outlet had been provided. Many classroom had none at all. What daylight could get through the windows had been regarded as sufficient for schoolroom purposes.

Light meters showed, however, that daylight did not do the job, and that artificial lighting was necessary. A costly program? Yes. But the Denver board said that the first consideration was the eyesight of Denver's 50,000 boys and girls.

Installations required, in almost every instance, new branch circuits. In many cases it was necessary to increase the wire size brought to the lighting panels. In some instances, complete rewiring was required.

The job and the money involved looked formidable, for the board knew that in addition to lighting, the dull, scholastic drab that covered the walls of Denver schoolrooms must also go. Children's eyes are better protected by a flatcoat paint than by the high luster browns that were standard in the Denver schools for many years. Furniture and floors, too, must be considered.

The first installation of fluorescent lighting was made in March, 1947. In one school building, various makes of fixtures were installed on an experimental basis. The board, administrative staff, principals, and teachers studied the results and chose what they thought was the best fixture. The next stage was to light one room in each school building. The room that most needed artificial light was selected by the teachers for the one bright spot in that school, a symbol and a promise of the day when the whole building would be lighted. That day has arrived.

The total cost of electrical fixtures in all Denver classrooms will be under $700,000. Maintenance of the fixtures is carried out by the custodial staff at no extra cost. It is too early to give an accurate estimate of operating expense.

The cost of painting the walls and refinishing floors and furniture has been carried out under the maintenance budget of the schools which was enlarged to take care of this accelerated program.

Prior to the installation of the new lights, the average artificial lighting in Denver classrooms was that of five foot-candles. Today the Denver schools are maintaining 25 foot-candles in all regular classrooms, while rooms such as those devoted to mechanical drawing and other subjects requiring close eyework have a lighting of 45 foot-candles.

Over-all direction of this program of new light and color is in the hands of Dr. Kenneth E. Oberholtzner, superintendent of the Denver public schools, and Mr. Graham R. Miller, assistant superintendent in charge of business management.

DOES TELEVISION DAMAGE THE EYES?*

BENJAMIN RONES, M.D.

Washington, D. C.

One of the great milestones in the diagnosis of diseases of the human eye was the invention of the ophthalmoscope by von Helmholtz just one hundred years ago. This utilized the principle of throwing a beam of light into the patient's eye and focusing the returning rays so that the interior of the eye became visible to the observer. This simple but epoch-making discovery aroused a controversy which was settled only after the elapse of considerable time. Would not throwing light into the eye damage the lens and retina? If God had wished to make the interior of the eye visible to the outside world, would not provision for this have been made? The proponents and opponents of this new instrument could not settle these issues on theoretical grounds, but with the daily use of the ophthalmoscope by ever-increasing numbers of physicians, it was soon found that there were neither immediate nor delayed harmful effects from its use. Today the ophthalmoscope is included in the diagnostic equipment of practically every physician.

Another epoch-making invention, television, now engrosses the world, and a similar series of misapprehensions have gained currency with respect to the danger of its use to the human eye. Due to the amazing possibilities of this new medium, and the certainty of its increasing use, it is well worth examining the possibilities of its effect on the organ of vision.

The television camera produces an electrical image on a plate in an image orthicon tube. An electron gun in the tube scans or sweeps across this plate producing in an external circuit voltages proportional to the intensity of light of each portion of the image. They are suitably amplified and transmitted on a high frequency radio signal into the air. The radio signal is picked up by the receiving antenna and conducted to the receiving set. The proportional voltages are separated from the high frequency radio signal and applied to the picture tube in such a manner as to control the intensity of the emanation from the face of the tube. Suitable pulsations are also transmitted causing the scanning movement in the picture tube to follow exactly the scanning movement in the image orthicon. We thus have an exact electronic reproduction of the photographed object now visible on the screen of the receiving set.

The first question to be decided is if it is possible for any radiation to be given off in front of the screen which could injure

*From the *Sight Saving Review*, Fall, 1949, p. 127.

the eyes. Theoretically, soft x-rays are produced when a picture tube is operated above about 20,000 volts, and such rays can constitute a health hazard unless the tube is adequately shielded. So far as is known, however, no direct view machines require voltage of this strength. High voltage is used in some of the projection-type machines, but here one does not view the image directly on the screen, but by projection through reflectors, and consequently the danger is so remote that screening precautions are not considered necessary.

Many ophthalmologists have complaints that after watching a television program for an evening the patient, or his children, complains loudly and frequently about pain in the eyes. The frequency of these complaints justifies examining the contributing factors to see if they cannot be minimized and greater ocular comfort achieved. The clarity of the image on the screen is of primary importance. Since the strength of the received signal is, in general, inversely proportional to the distance of the receiver from the sending station, it naturally follows that receiving sets placed beyond the normal service area of the station will not receive a good signal, and consequently the screen picture is "grainy" and indistinct and conducive to ocular fatigue. Therefore, stations should only be tuned in that afford a powerful enough signal to give a clear-cut image. This is fairly easy to do in cities where several sending stations are located. However, in smaller towns on the periphery of the zone of good reception, the sale of television sets has been proportionally almost as great as in the more populous centers. It is in these areas of poor reception that we can expect evenings of watching flickering images on the television screen, with resultant headaches and ocular fatigue.

The standard television picture is produced by 525 horizontal lines. If the number of lines per picture could be increased, the image would be proportionally clearer. However, this cannot be done under the present broadcasting regulations of the Federal Communications Commission. Consequently, increasing the size of the screen does not increase the clarity of the image, since only the same 525 lines are utilized on the larger screen. What it does is to magnify the image, together with all of its imperfections. The question of large screen versus small screen should only be decided by the distance of the observer from the screen, for the bigger the image the farther away the observer will be able to see it.

Besides the clarity of the image, it is important for ocular comfort to have steadiness of the picture, and the minimization of "light bands" and other interferences. These can be controlled in

several ways. The type and location of the antenna and the lead-in equipment should be proper for the receiving set. If the instrument possesses a fine-tune control, this should be properly adjusted, as also should the focus-control built into the set. Merely adjusting this equipment once is not sufficient, for the set must be kept properly serviced for maximum performance.

The factors discussed above are peculiar to television. However, there are other factors which are necessary for ocular comfort under all conditions, and which are also important in viewing television. The illumination of the room should not afford too great a contrast between the background and the screen. With the proper daylight screens it is not necessary to keep the room dark in order to obtain a clear image on the screen. The constant shifting of the eye from a bright to a dark background causes considerably more work in the pupil-regulating musculature and therefore quicker fatigue than occurs when the background is partially illuminated. Moderate indirect lighting of the room is the preferred type. Some individuals find that the use of a filter in front of the screen gives them greater comfort, and there can be no objection to this. However, it is not advisable to wear light-absorbing lenses (sunglasses) while viewing television, for the eye becomes adapted to this in viewing the well-illuminated screen, but greater effort is required to see the other objects in the under-illuminated room. The type P4 screen which is generally used in television tubes has a color composition which appears white to the eye, and produces a minimum of fatigue even when viewed for long periods. It is also so balanced as to minimize flicker effects and yet give clear pictures of fast-moving objects.

It was mentioned above that the proper distance to sit from the screen was dependent on the size of the screen. If the instrument is to be placed in a large room and used to entertain the children and their friends, then a large screen is desirable. However, if only two or three people expect to view it in a smaller room, then the smaller screen will offer a more clear-cut and satisfactory image. No matter what size screen is used, it is not necessary for the person with good vision to get very close to the instrument; and if this is the only way he can see the image, then it is wise for him to have his eyes examined, for he is not seeing properly. It is also more comfortable to view the screen from directly in front, for there is considerable distortion when the angle of observation is too great.

The question then arises as to how long one should look at a television screen without expecting to develop symptoms of ocular

fatigue. This will vary with the individual, just as some people can walk very long distances without undue fatigue in their legs, while others get tired after only a short walk. The type of program will also have some effect, for a program requiring mental concentration will induce fatigue much sooner than the laughter-provoking type. This is just as applicable in reading, where it is well known that it is less tiring to read a mystery tale than an equally mysterious economic treatise. If it is desired or necessary to spend a prolonged time in the observation of the television screen, it is advisable to break the fixation by shifting the gaze away from the screen at fairly frequent intervals. The "pause that refreshes" holds true for television as it does for other better advertised activities.

Above all else, it is to be remembered that very few people have eyes of perfect focus. Those individuals with low refractive errors are able to carry on the ordinary tasks of life that do not require prolonged use of the eyes without any discomfort. However, as soon as they demand from their eyes the continuous observation of detail on a television screen, they are then bringing into prolonged activity all the important components of the visual act, such as accommodation, convergence and fusion. The small refractive errors, or muscular imbalances, or accommodative or fusion difficulties, now produce fatigue after comparatively short periods. It is not that the eyes are damaged by television, but rather that television is demanding more accurate use of the eyes and therefore the correction of small errors to promote their comfort. Paradoxically, it may eventuate that the fatigue induced by television may be a sight-conservation boon, for it will cause the individual to seek medical attention earlier and, in a number of cases, allow serious eye diseases to be discovered at a more favorable time than would otherwise be the case.

* * * * *

Child Accidents,—Here's a word of warning to all Moms and Dads: Accidents are the greatest kid-killers in America!

According to the 1949 edition of the National Safety Council's statistical year book, "Accident Facts," accidents far outrank any of the more generally feared childhood diseases as a cause of death among children 1-to-14 years old.

There were 10,731 accidental deaths in that age group in 1947 —three times more than were claimed by pneumonia, the next most important cause of death. And accidents caused 42 times as many deaths as polio.

WHAT ABOUT EYE EXERCISES?*

WILLIAM H. CRISP, M.D.
Denver, Colorado

It is natural that persons with defective sight should seek improvement. Many, of course, obtain help by means of spectacle lenses. But there are many eyes in which serious disease prevents improved vision with glasses, and it is natural that persons with such eyes should grasp at any other promising method. There are also many persons who so dislike wearing glasses that they will listen to claims made for certain so-called "exercises." Can sight be improved in this way, and is it possible to avoid the wearing of glasses by exercise?

The eye is a living optical instrument. In many persons its optical structure is decidedly imperfect. In other cases disease has permanently destroyed parts of the optic nerve, or scars interfere with the accurate passage of light rays from the outside world into the eye. Some misguided or definitely dishonest persons claim to remedy these conditions by subjecting the eye to exercises, or instructing the patient in the performance of such exercises. Sometimes a substantial payment for this sort of treatment is accepted and a supposed guarantee of cure is given.

Professional tests for the proportion of normal vision possessed by an eye are made upon mathematical bases, usually with letters of varying size or placed at varying distances from the patient. The ability to read these letters is compared with the ability of the normal eye to read such letters at corresponding distances. The patient may think he sees better at one time than at another, but the final decision does not depend upon the patient's mental impression but upon his actual reading of the letters.

The human eyeball is only about one inch long. A difference of one fiftieth of an inch in length makes an extremely important difference in ability to see or in the strength of spectacle lens required for accurate seeing. The eye that is a trifle too long is nearsighted, and one that is a trifle shorter than normal is farsighted. Astigmatism is due in general to inequality of curvature in different directions of the surface of the eyeball, and such difference, usually unnoticeable on looking at the eye in the ordinary way, may be extremely important as to the accuracy of sight.

What are the exercises from which improvement of sight is claimed by certain quacks? They are quite childish and futile. One is "palming," which amounts in practice to nothing more than resting the eyes by covering them while relaxing the mind. "Swing-

*From *Sight Saving Review*, Fall, 1949, p. 158.

ing" or "swaying" is little more than rhythmic turning of the body from side to side with the eyes closed. This particular exercise has been unscrupulously recommended for the extremely serious disease called glaucoma, a leading cause of blindness arising in adult life. The three-quarter-blind English novelist, Aldous Huxley, has spoken enthusiastically of a ridiculous exercise which consists of closing his eyes while he imagines a long paper tube extending into space from the tip of his nose, and with which he imagines himself drawing various outlines by movements of the head.

Huxley's defects of vision are due to scars formed from eye disease in his early life. In others there is definite destruction, partial or complete, of the optic nerve which can never be repaired. Glaucoma, already referred to, is due to excessive hardness of the eyeball. Taken in time it may be helped with medicines. Often it can only be stopped by a surgical operation performed without too much delay. Cataract is due to clouding of the natural lens inside the eye. When sufficiently developed, it calls for surgical removal of that cloudy lens. But none of these conditions can be cured or even improved by any sort of exercise.

The only condition that may sometimes be benefitted by certain forms of exercise known to the trained eye specialist is strabismus, squint, or cross eye.

About eight per cent of all males have important defects in the ability to distinguish different colors. During the second World War many attempts, a few honest, many dishonest, were made to qualify candidates for enlistment in special services by training them in ability to identify test cards for color vision. Because of certain partial imperfections in these tests a candidate may occasionally succeed in obtaining an improved score on a second or third test, although his color vision is still just as defective. Both the instructor and the candidate in such a case may be endangering the lives of the crew of an airplane or a sea-going ship. Similar risks from mistakes made by color-blind personnel exist in many civilian occupations, including marine, railway, and aviation services. From a thorough investigation by eye surgeons, optometrists, and members of the armed forces it has been clearly demonstrated that defects of color vision cannot be corrected by any sort of special training of the eyes.

Neither diseased conditions of the eyes, nor optical defects calling for correction with spectacle lenses (nearsightedness, farsightedness, and astigmatism), can be remedied by any system of exercises. Persons with defective sight should consult, and should accept the deliberate judgment of, a competent eye specialist, and should follow his advice as to the treatment necessary.

THE PRESIDENT-ELECT, 1949-1950

GERTRUDE E. CROMWELL, President-elect, American School Health Association.

Born: Humboldt, Iowa.

Education: Elementary and High School, West Chester, Pa.
Graduated—Two years Normal School at West Chester, Pa., Boston Children's Hospital and Simmons College of Public Health Nursing, B.S., 1927
University of Michigan, Health Education Supervision, 1938

Teaching and Nursing Experiences:
Public Schools, Chester Co., Pa., 1918-23
School Nursing, Bath, New York, 1927-30
Director, Child Health, Denver Tuberculosis Society, 1930-32
School Nurse, New Paltz Teachers' College, 1932-33
School Nurse, Corning, New York, 1933-34
Assistant Dean of Women and Instructor in School Health, West Chester Teachers' College, 1934-36
Supervisor, Bureau of Health Education and School Nursing, Des Moines, Iowa, Public Schools, 1936-48
Presently—Supervisor, School Nursing, Denver Public Schools, Denver, Colorado, 1948—

Professional Affiliations:
A.S.H.A. (Fellow), A.P.H.A., N.O.P.H.N., N.E.A., American Nursing Association, Local Associations of the above groups.

Offices Held:
1. Vice President, A.S.H.A., 1942 and '49
2. Member of Governing Council A.S.H.A. since 1943
3. Vice Chairman, School Nursing Section, N.O.P.H.N., 1940
4. Consultant to Red Cross on Home Nursing in the Schools, Des Moines, Iowa, 1943-44
5. Assistant Editor, Journal of School Health
6. Editorial Board of Journal of Health, Physical Education, and Recreation.
7. Consultant to California branch, A.S.H.A.

Author of:
Health of the School Child, 1946, Saunders Co., Philadelphia
Editor, School Edition, Home Nursing, American Red Cross
Numerous articles on school health for various educational and nursing magazines.

WILLIAM A. HOWE HONOR AWARD FOR 1949

The William A. Howe Honor Award for 1949 was granted at the Annual Dinner Session, October 26, 1949, to two outstanding Fellows of the American School Health Association—Arville Ottis DeWeese and Clair Elsmere Turner.

The Citation for Dr. DeWeese was made by Paul Landis, M.A. of Columbus, Ohio, and it follows. The Citation for Dr. Turner will appear in the February *Journal of School Health.*

ARVILLE OTTIS DEWEESE

Arville Ottis DeWeese, listed in "Who's Who in America" as a physician—educator, was born in Corydon, Indiana, and received his early education in that state. He graduated from Indiana State Teachers' College in 1911, took the B.S. degree at the University of Louisville in 1918. In 1919-20 he was a graduate student at Indiana University and then attended the University at Louisville Medical School where he received his M.D. degree in 1924.

Dr. A. O. DeWeese has been a pioneer worker in the field of health education from the very beginning of his life career. He first began teaching health education in a District School in Indiana in 1907. At that time, health instruction in the schools was an innovation, it was something new and different. Health enthralled this man, it captivated him, and it became his hobby. The hobby of health education was carried on as he advanced from teacher, to Grade School Principal, to High School Principal, to Superintendent of Schools. Here truly was an educator and school administrator who believed in health as a first cardinal principle in education.

His interest and enthusiasm for health mounted and increased with each passing year. What started as a hobby soon developed into his life work. He was a County Superintendent of Schools from 1911 until 1918. From 1911 until 1924, when he received his medical degree, he contributed numerous articles to the old Educators Journal and Teachers Journal. In addition, he did extensive lecturing and teaching in health education at Teachers Institutes and Extension courses during his years of service in medical school. Between the years 1918 and 1924 he served as instructor, assistant professor, associate professor, and professor at the University of Louisville Medical School.

In 1924, Dr. A. O. DeWeese became Director of Student Health Service at Kent State University, Kent, Ohio, a position he has held for a quarter of a century. The health and physical educators program, the health service program, and the teacher training program at Kent State University are a monument to his outstanding ability and leadership.

He was one of the first members given the Award of Merit for outstanding work in health and physical education by the Ohio Association for Health Physical Education, and Recreation. This year he was the recipient of the University of Louisville Medical School Award for outstanding service to the medical profession.

To Dr. A. O. DeWeese "service" is a by-word on a local, state, and national level. He is a member of the staff of the Robinson Memorial Hospital and past president of his local medical society. He has served as chairman of the committees on Health Education in Teachers Colleges at two National Conferences on College Hygiene and Health. He has been chairman of the Committee on Health Education of the American College Health Association for 12 years. He is a fellow in the American Medical Association, American Public Health Association, and the American School Health Association.

For the past 35 years he has been a regular contributor to professional and educational journals and to the printed proceedings and reports of state and national organizations. Is it a wonder, that children living in the environment of a home where health was constantly practiced and preached, should catch the spirit of service to humanity? This is evidenced by the fact that he sent three sons through medical school and all three are now active in the medical profession. Furthermore, his only daughter married a physician. Here truly is a remarkable portfolio of a man and his family devoting their lives so that others may live healthier and happier lives.

Dr. A. O. DeWeese is a fellow, a charter member, and past president of the American School Health Association. He is the second Secretary-Treasurer of the American School Health Association, and has served in this capacity since the retirement of Dr. William A. Howe, in whose honor this certificate is awarded, and who was the Secretary-Treasurer from the founding of the organization in 1927 to 1936. This means that Dr. DeWeese has given 13 years of loyal, efficient, and unselfish service to the American School Health Association. It is a distinct honor and privilege in behalf of the American School Health Association to present the name of Dr. A. O. DeWeese, M.D., physician, educator, administrator, distinguished leader and pioneer in the field of health education, for the William A. Howe award.

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Assistant to President, National Foundation for Infantile Paralysis,
New York, N. Y.

EDITORIAL

The article of Dr. Benjamin Rones on "Does Television Injure the Eyes" is a definite contribution to this much debated topic. Several factors appear.

The distance from the sending station, since too great distance gives a blurred image, is important.

The size of the screen seems to have little bearing, the real factor being the 525 lines to the inch on the screen allowed by the Federal Communications Commission. To enlarge the screen seemingly would cause greater indistinctness.

Frequent — almost constant — adjustment is necessary and type and location of the antenna are important.

The illumination of the room should not be in too great contrast to the illumination of the screen.

The distance of the looker from the screen is important. A large room seems to need a large screen, and a person should sit directly in front of the screen.

So much for some of the factors having to do with vision itself. There are, however, other factors that are important in considering the use of television in the home, particularly the home where there are young children. The type of program, made up largely as it is, of Westerns, Gangsters, and other startling, more or less murderous activities, is not the thing that the thoughtful parent wants in the home, particularly at the dinner hour or just before the bed-

time hour. We are fostering a generation fed on excitement, often harassing and frightening excitement. These undesirable programs are thrust upon us—if we are foolish enough to have television in the home—just at the hour when peace, happiness and goodwill should be emphasized—the dinner hour. I recall a distressing circumstance occurring recently. The dinner hour, a seven-year-old boy, a television set operating. The boy sits on the edge of his chair at an angle to the dining table, he tries to watch some murderous events going on and to eat at the same time. Result: neither operation is a success nor a pleasant experience. Only half a meal is eaten, the whole scene is a turmoil and a frustration.

No wonder we are growing a generation of neurotics, and that juvenile crime—often very juvinal—is on the increase.

It is possible that the quality of television shows will be improved. It is to be hoped so: until they do, keep them out of your home and young fry away from them.—*C.H.K.*

* * * * *

PROGRAM

New York State Society of School Physicians Joint Program with the School Nurse Teachers in the Ballroom of the Onondaga Hotel, Syracuse, N. Y., Thursday, January 26, 1950:

12:15—Luncheon—Speaker
"Emotional Disturbances in School Children"
Dr. William Cruickshank, Director, Bureau of Special Education, Syracuse University.

2:15—"Winning Support for School Health Services"
E. R. Van Kleek, M.D.—State Education Department.

3:00—"Evaluation of the Well Child"
N. I. Rubin, M.D., Pediatrician-in-Chief, Buffalo Children's Hospital.

3:45—"Inter-Agency and Inter-Professional Relations in the School Health Program"
D. A. Dukelow, M.D., Consultant in Health and Fitness, American Medical Association.

4:30—"Orthopedic Problems in School Children"
R. D. Severance, M.D., Syracuse, N. Y.

Edward L. Schwabe, M.D., *Chairman, Program Committee*

ABSTRACTS

Getting a Rural School Health Job Done,—It was grand to be called County School Health Supervisor but I was the only nurse in the county program. In addition to the administrative duties of the position, I served as staff nurse. My prime thought was "How could one nurse possibly carry out in eleven rural schools, with between 5,000 and 6,000 children, any kind of a good health program?"

After a little hard thought I came to the conclusion that with the understanding assistance of teachers and students a more complete health program might be carried out and at the same time the students stimulated to a new interest in health.

My approach was to the principals and through them to each individual teacher. In one of our larger schools, the physical education teacher was in charge of the health work. This teacher was keenly interested in the idea of a student health council and amenable to suggestions from the nurse in the development of the program. He soon had a council which was really working. It was started out of his senior health classes, by dividing the classes into committees of three or four to assist in such programs as immunizations, physical examinations, dental examinations, hearing tests, vision tests, general health, preschool clinics, the posters on safety and health, and the milk program. The milk program was handled by the student committee and through it milk was supplied to children in the first three grades at 10 o'clock in the morning. The health council met once a month to discuss current problems and hear the reports of the various committee activities. The teacher who was responsible for the council, felt that it worked most effectively—the students learning through actual practice and assuming a load ordinarily carried by the teacher or else left undone.

Prior to immunization day, plans were made to talk with groups of girls who were interested in going into nurse's training and groups of boys who thought they might like the medical field, with the idea of assigning selected individuals to help the nurse. On immunization day, before the doctor arrived, I talked with the ones chosen, explaining the importance of each of their duties. The students rounded up the children, cleaned the area for injection on the arm of the child in preparation for immunization or vaccination by the doctor, and reported the data on each child immunized. After the doctor left, I discussed with the group what they had done, answered their questions, and demonstrated to them how they could prepare for my next visit to the school.

As regards the confidential basis of the health records. The records are kept filed, by the individual classroom teachers in the elementary grades and in the principal's office for the secondary grades. In some instances the information about the pupils was charted by the teachers. In each school, there were never more than two and usually only one senior student assigned to chart any defects. These same students assisted with the recording of data for all examinations done in their school. In the case of any added important problem, I would do the charting myself. The data charted by the one or two students in each school assigned to record were really not of a strictly confidential nature, such as normal vision and hearing scores, heights, weights, immunizations or vaccinations, and the like. The abnormalities and other information which were of a confidential nature were charted by the nurse and discussed with the teacher.

The completion of our physical examinations in each county school was also made possible through the fine assistance of the student health groups assigned to work with the doctor and the nurse. Five or six students were selected to help with the physicals in each school. I worked with the students preceding the examinations, showing how to weigh, measure, take temperatures, and record. The students would have the set-up ready for the examination the morning that the doctor and the nurse were scheduled to arrive. In all of the elementary grades the teachers were encouraged to be present for the examination. During the physical examination, printed forms were filled out by the student assistant and any defects found were charted. I checked each slip after which copies of the reports were sent to the parents of all children who had received an examination. I charted the results on the school's permanent record card for the child and discussed them with the child's teacher.

All of the records were reviewed at frequent intervals during the year by the teachers. As the recording was being done, I was always present to guide the students and to check on their work. Looking back on our program I believe we had very few errors in recording. This, I feel, was due to the careful selection of the students picked to do the recording and to the preparation which he or she was given for the work.

In our preschool examinations in the spring, the student group, who by this time were quite familiar with their duties and responsibilities, helped make our clinics more successful than they had ever been. In addition to taking temperatures, weighing and measuring, assisting the doctor and recording, two students were

taught how to use the Snellen Chart for Vision Testing. Both our little preschoolers and the old students who did the testing seemed to enjoy thoroughly their little game of telling "which way the legs of the table point?" The preschool clinics were organized in most of the schools by the first grade teachers who were assisted by active and interested parents.

The vision testing program in some of the schools was turned over to the group of student health assistants, who, with the teachers, did the complete screening of the children with the Snellen Chart.

Another project in which every student health group took part was the survey following up the dental examinations which were done in the county the preceding spring. By this means we were able to obtain the percentage of students who had had the recommended dental corrections made. The survey, too, encouraged a great many who had not seen their dentist to go immediately. It was found that about 40 per cent of those with dental defects sought corrections, and this information was then presented to our local dental society. We then started on a more thorough dental examination of the children in the grades—1st, 4th, 7th, and 10th. The student health group were taught how best to assist the dentists in their work, mainly by keeping their instruments sterilized and by recording the defects found. Others in the student health group were in charge of distributing literature and rounding up those children who were to have the examination.

Through their splendid assistance, these boys and girls on our school health committees not only made it possible for us to broaden our total health program in the county but the program itself became an educational experience to the boys and girls. It resulted in these helpers learning about themselves and developing a keen interest in the entire community school health program. To the teachers, the student health councils showed a means of learning through actual practice. (By Anne B. Steed, R.N., Abstracted from Public Health Nursing, November, 1949, p. 609—G. E. Cromwell.)

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The Tuberculosis Problem in 1949,—Tuberculosis is a communicable disease which can be prevented, yet it is killing nearly 1,000 Americans a week, 125 persons a day—at the rate of one person every 11 minutes.

Tuberculosis leads all other diseases as a cause of death among young adults from 15 to 34 years of age.

Tuberculosis causes more deaths than any other infectious disease.

Tuberculosis cost more lives than any other disease caused by a bacterium.

Tuberculosis causes one out of every 30 deaths in this country. Of every 12 deaths among Negroes, one is due to tuberculosis.

Although no other disease causes as many deaths as tuberculosis in the age group from 15 to 34, tuberculosis can strike at any age. The median age at which people died of tuberculosis in 1947 was 46.

Approximately 1,000,000 working years are lost by those who die of tuberculosis in a year. An estimated 1,500,000 potential years of life are lost annually by those who die of tuberculosis.

The care of tuberculosis patients in hospitals in one state (New York) last year cost $23,000,000 in public funds.

The cost of the entire tuberculosis control program in the United States is estimated at more than $350,000,000 a year. Included in this amount are expenditures by both public and private health agencies for the care of tuberculosis patients, case finding, public health nursing, health education, rehabilitation, treatment by private physicians, assistance to families where the wage earner has tuberculosis, medical research, and pensions to veterans. The cost of hospital construction is not included, nor are the tremendous costs of lost wages, lowered production, and broken homes.

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Why People Burn to Death,—Because precautions are not taken to prevent fires there are 650,000 building fires every year, dwellings rating the highest, or 285,000; the greatest loss being from smoking and matches. The loss, 43 million dollars from that source alone. Other causes of fire are defective heating equipment, misuse of electrical equipment and defective wiring; sparks on wooden shingle roofs, defective or overhead chimneys and flues, children playing with matches, careless handling of flammable liquids.

People burn to death because of careless smoking, smoking in bed, children playing with matches, children left alone in home, clothing ignited by open fireplace or bonfire, dry cleaning with gasoline or naphtha, kindling fires with kerosene, re-entering building to rescue pets or belongings, trapped in burning buildings, dust explosions.

Farm fires cause a loss of $90 million dollars annually, in which 3,500 people are burned to death. There are 25,000 barn fires annually.

There are 1,000 home fires every day.

A dwelling fire occurs every 90 seconds.

Once every 50 seconds someone is burned to death.

800 million matches are used daily, every one a potential fire hazard.

250 billion cigarettes are smoked a year, each a fire hazard if carelessly discarded.

A clean house, store or factory seldom burns. Remove combustible rubbish regularly. Provide covered metal containers to hold necessary collections of rubbish.

Never discard a lighted match or cigarette. Never smoke in bed. Use safety matches and keep matches where small children cannot reach them.

Keep chimneys and furnaces clean and in good repair and protect all nearby combustible surfaces.

Never use wooden shingles as roof covering. Use a fire retardant roofing material.

Have your electrical equipment and wiring properly installed and checked. Replace worn cords. Use electricity safely.

Use care with gasoline, kerosene and similar liquids always. Never use gasoline in the home.

Put hot ashes in covered metal cans. Keep oily rags in closed metal containers. Never use candles on or near a Christmas tree and keep the tree standing in water. Know how to call the fire department and the location of the nearest fire alarm box. **Pennsylvania's Health, April, June, 1948.**

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Ringworm of the Scalp,—Ringworm of the scalp is still a problem in many parts of Denver. While it does not harm the general health of a child, it is highly contagious; and it does cause an unsightly condition of the scalp that may continue for many months or even for years.

The true scalp ringworm differs from the ringworm usually found on the skin in that it is much more resistant to cure. It causes little inflammation of the skin. Generally it is not seen in adults or older adolescents.

Contagious ringworm of the scalp was rarely seen in this country prior to 1941, then it was seen on the eastern coast, spreading rapidly over the entire country, and has now become a public health problem, especially in larger cities.

Ringworm of the scalp is difficult to cure. It is necessary for the diagnosis to be made with the special Wood's light. This light shows the blue-green color of the infected scalp and hair.

The earlier the diagnosis is made and treatment is started, the easier it is for the doctor to control the infection. Unless prompt treatment is given the ringworm may spread over the entire head.

Over the week-ends and during vacations, children do not have the benefit of an inspection at their school where the nurse makes periodic checks of all elementary children by using the Wood's light. There is more travel in vacation periods and during week-ends; children have more time to spend in theaters. Watchfulness on the part of parents is a prime necessity.

An area of broken hair and a grayish scaling of the skin, with little other sign of inflammation, is evidence of ringworm of the scalp. Since there is little discomfort the parent may not note the presence of the infection until it is far advanced. It is, therefore, important that parents be on the lookout constantly for such a condition. Immediate diagnosis should be made if there are suspicious symptoms.

Ringworm of the scalp is extremely contagious and is acquired from broken off, infected hair which may remain on the back of a theater or bus seat; from the hat of an infected child; from a comb or brush belonging to a child who has the disease; or from another child's towel. The infection may also be acquired in barber shops. One place where the infection is likely to spread with alarming speed is in swimming pools. Close-fitting bathing caps should be worn, and special care should be taken to keep towels in paper or rubber bags when not in actual use.

Parents are responsible not only for their own children but for hundreds of others who might be exposed to the infection.

It is necessary for children with infected scalps to have their hair *completely covered.* One loose, infected hair can infect any scalp with which it comes in contact. A cap made of the top of a cotton stocking is convenient, easy to make, and readily laundered.

If parents suspect that a child's scalp is infected, they should consult the family doctor AT ONCE for advice concerning the treatment. The earlier the doctor sees the child, the more easily he can control the condition. If parents do not have a family doctor, they may take the child to the Colorado General Hospital or the Denver General Hospital. Both of these institutions have a Wood's light, for diagnosis and checking the progress of the disease.

Parents MUST have an appointment and must accompany the child.

Parents should explain to the child *why* certain precautions should be taken in order to avoid the infection.

1. He should not be allowed to play with children who are known to have scalp infections unless the infected child's scalp is covered.
2. His hair should be washed with soap and brushed immediately

after having a hair cut at a barber shop. All loose hair should be removed and the scalp must be very clean.

3. His hair should be covered when riding a bus or train. He should be cautioned to cover the back of the seat with a scarf if sitting in a public seat which has a cloth back.
4. He should wear a cap when in a swimming pool.
5. He should use only his own comb, brush, swimming cap, and towel.
6. All upholstered furniture should be kept clean and free from hair. (Published by Board of Education, Denver, Colo.)

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School Physicians Mobilize,—Acting on the time-tested principle that "united we stand," and having read the writing on the blackboard, the school physicians of Massachusetts have banded themselves together into their own organization. Such a union is long overdue and in the very nature of its purposes is a praiseworthy undertaking.

Formed in order "to work for the betterment of school health service, to encourage the meeting together of school physicians in Massachusetts, to exchange experiences and to discuss problems pertaining to any phase of school health service, and to promote a better understanding between the school physicians and the community," the Association cannot but add dignity and prestige to a very vital medical responsibility.

Obviously only a small percentage of school physicians are employed on a full-time basis; in most communities part-time service is all that is required or needed. All the more necessary is it for the school physician, then, to look upon this segment of his activities not as a pot-boiling auxiliary appendix to his major income-producing labors, indifferently accepted and grudgingly discharged, but as a specialized and valuable department of practice.

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REVIEWS

Public School Audiometry—Principles and Methods,—*Loraine A. Dahl,* The Interstate Printers and Publishers, Danville, Illinois, 1949, pp. 290. Price $3.00.

This is a very instructive and practical text covering the field of Public School Audiometry.

It discusses the need; covering such facts as the number of school children showing hearing loss, the factors that interfere with adequate and proper use of the audiometer, classroom adjustment, etc.; presents material on methods of creating interest by

means of organizing city and county Programs for hearing conservation, for follow up of cases, for coercion by law, and the objectives of hearing testing; the techniques and principles of audiometry; and concludes the body of the material by a manual of instruction in audiometric procedures. There follow a group of appendices and a twelve page Bibliography.

At a time when audiometry and hearing lacks are increasingly prominent in the minds and discussions of public school administrators and teachers this text is extremely fitting and worthwhile. —*C. H. K.*

Sports Officiating,—*Elmer D. Mitchell, Editor,* A. S. Barnes & Co. 1949, 490 pp. Price $4.00.

This is an excellent informative text covering in some detail the History; Governing Body; Officials, their positions on or about the field of play, their duties briefly summarized; and, for such games as basketball, football and lacrosse, the hand and arm signals used to inform spectators of the progress of the game, the reason for penalty, etc.

While for officials, coaches, and players it must be supported and detailed by the official rules, it has great value to officials, to spectators, and to students in colleges who are studying to become physical educators.—*C.H.K.*

"Human Growth",—*Lester F. Beck,* Harcourt, Brace and Co., New York, 1949. 124 pp. Price $2.00.

This is a text on sex education designed basically to inform the adolescent boy and girl regarding normal growth and development of the body and child; the differences in growth and form of the boy and girl; the functioning of the sex glands and of the sex cells which equip each sex to fulfill its normal part in parenthood and; the process of egg fertilizations; and the "miracle of birth."

Fortified by questions and answers at the end of each section, and by a rather complete glossary this is a brief, definite, and clear presentation of sex information.

It derives from the same source and covers nearly the same area of information as does the film of the same title.—*C. H. K.*

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MEETINGS

The American Public Health Association and probably the **American School Health Association** will hold their next annual meeting at St. Louis, Missouri, in October, 1950.

The New York State School Physicians Association will meet at Syracuse, N. Y., January 26, 1950.